

## CLAIMS

1. An apparatus, comprising:

a network interface to communicate frames of information in accordance with a wireless protocol; and  
a frame authentication module operatively responsive to said network interface, said frame authentication module to authenticate frames communicated by said network interface.

2. The apparatus of claim 1, wherein said network interface comprises a network interface defined in accordance with the Universal Mobile Telecommunication System Specification.

3. The apparatus of claim 1, wherein said network interface comprises a network interface configured in accordance with one of an Iub Specification and an Iur Specification.

4. The apparatus of claim 1, wherein said wireless protocol comprises a framing protocol defined by one of an Iub Specification and an Iur Specification.

5. The apparatus of claim 1, wherein said authentication module comprises:  
an authentication encoding module to encode each frame with authentication information; and

an authentication decoding module to authenticate each frame using said authentication information.

6. The apparatus of claim 4, wherein said authentication encoding module generates said authentication information using an authentication key, data from said frame, and a change parameter.

7. A system, comprising:

a node B system having a first network interface;  
a first radio network controller to communicate with said node B system, said first radio network controller having a second network interface; and  
a frame authentication module for each of said first and second network interfaces, said frame authentication module to authenticate frames communicated between said first and second interfaces.

8. The system of claim 7, wherein said network interfaces each comprise network interfaces defined in accordance with the Universal Mobile Telecommunication System Specification.

9. The system of claim 7, wherein said network interface comprises a network interface configured in accordance with one of an Iub Specification and an Iur Specification.

10. The system of claim 7, wherein each frame authentication module comprises:
  - an authentication encoding module to encode each frame with authentication information; and
  - an authentication decoding module to authenticate each frame using said authentication information.
11. The system of claim 10, wherein said authentication encoding module generates said authentication information using an authentication key, data from said frame, and a change parameter.
12. The system of claim 7, further comprising:
  - a second radio network controller to communicate with said first radio network controller, said second radio network controller having a third network interface; and
  - a frame authentication module for said third network interface, said frame authentication module to authenticate frames communicated between said second and third interfaces.
13. A method, comprising:
  - receiving a frame of information over a wireless medium;
  - determining whether said frame includes authentication information;
  - authenticating said frame using said authentication information; and
  - encoding said frame with authentication information if said frame does not include said authentication information.

14. The method of claim 13, wherein said authenticating comprises:
  - retrieving an authentication key;
  - duplicating said authentication information using said authentication key;
  - retrieving said authentication information from said frame;
  - comparing said duplicated authentication information with said retrieved authentication information; and
  - authenticating said frame in accordance with said comparison.
15. The method of claim 13, wherein said encoding comprises:
  - generating said authentication information; and
  - storing said authentication information in a spare extension field of said frame.
16. The method of claim 15, wherein said generating comprises:
  - retrieving an authentication key;
  - retrieving data from said frame;
  - retrieving a change parameter; and
  - creating said authentication information in accordance with an authentication algorithm using said authentication key, said data, and said change parameter.
17. An article comprising:
  - a storage medium;

said storage medium including stored instructions that, when executed by a processor, result in receiving a frame of information over a wireless medium, determining whether said frame includes authentication information, authenticating said frame using said authentication information, and encoding said frame with authentication information if said frame does not include said authentication information.

18. The article of claim 17, wherein the stored instructions, when executed by a processor, further result in said authenticating by retrieving an authentication key, duplicating said authentication information using said authentication key, retrieving said authentication information from said frame, comparing said duplicated authentication information with said retrieved authentication information, and authenticating said frame in accordance with said comparison.

19. The article of claim 17, wherein the stored instructions, when executed by a processor, further result in said encoding by generating said authentication information, and storing said authentication information in a spare extension field of said frame.

20. The article of claim 19, wherein the stored instructions, when executed by a processor, further result in said generating by retrieving an authentication key, retrieving data from said frame, retrieving a change parameter, and creating said authentication information in accordance with an authentication algorithm using said authentication key, data, and change parameter.